

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-3.(canceled)

4.(previously presented) A magnetic write head, having an air bearing surface (ABS), comprising:

directly on a non-magnetic substrate, a first layer of high magnetic permeability material, having, on a first side, an edge whose surface is normal to said substrate and parallel to said ABS, that serves as a primary lower magnetic pole;

a first non-magnetic layer that contacts said first layer of high magnetic permeability material only at said edge and extends away therefrom, said non-magnetic layer having a top surface that is coplanar with that of said primary lower magnetic pole;

a second layer of high magnetic permeability material that serves as a secondary lower pole that fully covers and contacts said primary lower magnetic pole and said first non-magnetic layer, above which it serves as a ledge having a width;

a field coil over, and insulated from, said primary and secondary lower poles;

an upper magnetic pole that overlies said field coil, contacting said secondary lower pole at a second side that is opposite to said first side, and that is separated from said ledge at said first side by only a second layer of non-magnetic material that is a write gap, said upper magnetic pole having, at the write gap, a width equal to said ledge width, whereby it defines a track width;

said ledge extending away from said primary lower pole by an amount; and

said secondary lower pole having a thickness that remains unchanged over said secondary lower pole's entire length.

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Reply to Office action of 04/12/2010

5.(original) The write head described in claim 4 wherein said first layer of high magnetic permeability material is NiFe, CoNiFe, FeTaN, FeAlN, CoTaN, CoAlN, or CoFeN and has a thickness between about 0.3 and 3 microns.

6.(original) The write head described in claim 4 wherein said non-magnetic layer is silicon oxide, aluminum oxide, tantalum oxide, Al, Rh, Ru, Cu, NiCu, or Ta.

7.(original) The write head described in claim 4 wherein said second layer of high magnetic permeability material is NiFe, CoNiFe, FeTaN, FeAlN, CoTaN, CoAlN, or CoFeN and has a thickness between about 0.2 and 2 microns.

8.(original) The write head described in claim 4 wherein said upper magnetic pole is NiFe, CoNiFe, FeTaN, FeAlN, CoTaN, CoAlN, or CoFeN and has a thickness between about 0.3 and 3 microns.

9.(original) The write head described in claim 4 wherein said width is between about 0.05 and 1 microns.

10.(original) The write head described in claim 4 wherein said amount that said ledge extends away from said primary lower pole is between about 0.1 and 1 microns.

11 - 36 (canceled).